

21

1909

Journal

E. H. M.

Driver from St. George
S. C. Hardy

Joseph J. Atkins

~~Sept 5th 1891~~ 8/30/91

deposit 15³⁰ at Bowman & Co

Kanab to Crilt S. D. Cust

Four weeks on Kaitab River
James Owens & Supervisor
Kaitab, Utah

Forest Supervisor Kanab
John H. Clark

Sept 10. Saw the Colorado Cañon &
Huala Huala at the Big
Grand Canyon at the Fort Huachuca Point

San Juan

N. Slope South exposure
has more yellow pines
than the other being the only
tree but some on S. exposure
most common Abies & sometimes
Balcon & aspens were
found. When I came
out on the rim of Bright
Angel Canyon a belt of ^{small} Gambel
Oak was found. In this locality
the transition appears to be
somewhat cut out that it can
be marked only as a very narrow
line along rim of Canyon.
The N. slope mountain down
cold N. slopes to about 5000 ft
at least & from 5000-8500 ft
might be called Canadian
As it is made up of 3 species of
trees & aspens & scattered pines

(~~at~~ 2 species) abundant aspens.
~~at~~ ^{cold} strong E. wind with mass
of drifting clouds all day & colder
than yesterday. A flock of wild
geese seen flying over in the morning
headed S. across the Canyon at
a high elevation - a sign of colder
weather to follow! Hypocichlas
like those collected were common
in mixed woods at 8000 ft this
morning. Other birds very scarce.
Juniperus communis is scattered
through the mixed forest ~~between~~ at
8000 ft. today.

In the ~~valley~~ little park valley
on the Plateau there is an
abundant flora of small herbs
3 Ranunculus, an Aster.

in bottom of canyon 7-8 ft
 of sand & gravel. The canyon
 thickly covered with
 small plants - sagebrush, iron
 Red Cedar, Gambel's Quercus
 Pine. The first vegetation had
 probably started about
 1000 ft
 Red-rotated Coasters
 The Red Cedar came in a block
 of the trees started to the
 suddenly, became large
 record of much of all
 kinds but with numerous
 Cedars & pines
 The snow finally melted
 back came in at 5000
 Big pines dropped
 abruptly at 6000 ft
 Rhynchostylis glauca at 5500

Some small plants
 of the sagebrush, iron
 Red Cedar, Gambel's Quercus
 Pine. The first vegetation had
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Opuntia schottii & *Sphaer.*
green at 5300 ft

Opuntia at 4800 ft

Abundant at 4800 ft

Opuntia at 4800 ft

reached Creek at 5000 ft

At 4500 ft *Sphaer*-like

Comp. came in

at 4500 ft 19 in 2 patches

Opuntia, *Pinus*, *Cedrus*

a few *Opuntia* *Rhustilob.*

Sphaer & *Sphaer*-like comp. again

green at 4500 ft. *Opuntia*

Opuntia

Opuntia at 4500 ft.

At about this elevation the

Cedrus & *Pinus* suddenly

dropped out

Blue faced hawk seen at

4100 ft

The small leaved *Cercocarpus*
was common from 8000 down
to 4100 in Canyon

The men with maysan that
no red sheep are known
along N. side of Canyon in
this section except in Kaibab
Canyon where a few are reported
They say they are more common
on south side of Canyon

Abundant few leaved *Opuntia*
came in at 3700 ft

At 3000 ft *Atriplex canescens*

came in & the small leaved
sage dropped out & the *Opuntia*
became much larger & the only
prevailing shrub on flats &
low slopes

Thomber Cocks came in 3200

We reached the mouth of
Bright Angel Creek through the
narrow & very rocky canyon about
5 mi. long with ~~for~~ rugged granite
walls rising sheer on the sides.
In high water this road is closed as
the water marks now show a
depth of from 10 to 25 ft. of water
in flood runs which is not often
with about half a mile
or more the narrow road canyon
opens out to a flat ²⁰⁰⁰ ft. or so.
on the river which extends to the
mouth of the ^{much} narrower
creek branch but extends for near
a quarter of a mile along base
of cliffs. At upper end of this
a trail leads a couple of hundred
yds to a small & shabby car house
60 ft. above the river & on

opposite South Side a horse
trail is made up to top of first
mesa near road & above river
& joins the Bright Angel Hotel trail
at the Indian Gardens.
A few hundred yds above the river
on the Bright Angel Creek flat
a camp of half a dozen tents
is built by the Cable Co. made up
of Jim Emmett, Holsey, of Kanab,
Ally Gent Clark & I & some others
called the Grand Canyon
Transportation Co. They made
the trail down Bright Angel Creek.
A few years ago. D. D. Rust is the
present manager who takes parties
across & runs the camp. His
P.O. address is Kanab.

Sept 13 In camp at
Mouth Bright Angel Cr. 2300 ft -
Chuckwalla lizards here.
Also a few mice & mice at
upper end of Bright Angel
Cr. flat, plenty of Cat Clawed
Mice, Yucca, Yucca, Yucca,
One red rock Opuntia
The spinulosa with cochineal
insects on the pads,
numerous herb shrubs
of the Death Valley type
A very small but like
those at Lee Ferry was
abundant & seen flying
2 hours before sunset
in shadow of the canyon
cliffs. Wild Cat & Spotted
Tracks seen, Band-Tailed
Woodrats, Raccoon, Mongoose

Erinaceus _____ abundant
Canyon Wren ^{a few}, Yellow Warblers
like those at Lee Ferry Canyon
a few Black-headed Grosbeaks,
Rough Wg Swallow.
On way down a water ouzel
shot at about 2500 ft. They are
reported to live all along Br.
Angel Creek from ~~top~~ head down
to

Sept. 14 From Mt. Bright Angel
Cr. to Camp at Bright Angel Sp.
On way up species came in or

Artemisia canescens 3000 ft. common
Ephedra like *Conchoite* " "
Not rounded *Ephedra* " "
Gutierrezia like *Conchoite* with small yellow
flowers common 3000
Small *Yucca* *Coccothraustes* common 3000
Yucca baccata common " 3000

Also at 3000 ft. found
Strike wood } *Baccharis*
Prickly leaf comp.
" " small grass
Toothed leaves composite shrub
yellow fl. } *Yucca* *Conchoite* and leaves
Small green stem comp. yellow fl.
Small red stem } *Geranium* leaves herb
Cottonwood

The gray bunchleaved shrub with
long top stems (flowers) dropped
out by 3000

Altitudes of plants

Brownpod shrub tree 2800 —
Tree with glossy rounded leaves 2700 — 4100
Cat Claw bush 2300 —
~~Mesquite~~ 2350 — 2400
Spineless Cactus 2300 —
Red-jointed " 2300 —
Cylinder Cactus collected in House R. Valley 2300 —
Nail keg " 2300 —
Baccharis 2300 —
Green-stemmed Strike wood 2300 —
Gray-leaved high flower stem bush 2300 —
~~Leafless~~ Leafless herb yellowish fl. 2300 —
" " pinkish " 2300 —
Prickly leaf herb 2300 —
" " grass 2300 —
Gray Arrowwood-like shrub 2300 ft —
Small-frothy-stemmed prickly herb 2300 —
Small-red-stemmed mat-like herb 2300 —
Small red flowered herb-*Geranium* like leaves 2300 —
Broad prickly leaf yellow fl. shrubby herb 2300 —
Narrow scantily toothed leaves, yellow fl. herb 2300 —
Grapevine 2700 —

Apple leaf shrub com in 3100
Prickly leaved Oak " "
Small Rhus 3100 ft
Opuntia polycantha 3200 "

At 3300 ft in bottom of Canyon
Cercocarpus small (leaf) common
Opuntia polycantha " "
" (red fruit) common

Ephedra " "
Cat Claws " "
Cylindropuntia " "
Yucca baccata " "
Ephedra-like shrub yel. fl. " "
Yellow fl. toothed leaved shrub " "
Jarvisia leaved herb " "
Greenish fl. leafless shrub a few
Gutierrezia whitebloss " common
Stink weed a few
Apple leaved shrub a few

(3300 ft Cont.)

Baccharis a few
Whitish fl. leafless shrub a few
Atriplex canescens com
Small prickly leaf grass a few
Short branched Ephedra com
Prickly leaved Oak " "
Opuntia polyC. " "
Ephedra like shrub a few
Tooth leaved yel Comp " "

Agave
Yucca

Narrow leaf Cercocarpus
4000 ft (this is where we
ate dinner going down)
Cedar (monosperma) 4100 ft + alt 4200
mangrovia at 4300 ft
Pinyon at 4300 ft

At 4200 ft had
dinner on way up &
here the
Small leafed coccaspine
Pinon, Juniperus monosperma
Prickly oak
Rhus trilobata { a few
Mangrove
Red jointed Cactus &
Gutierrezia like yellow pine
var. common & formed
a scattered growth over
the ~~low~~ & the more barren
slopes as shown in
photo, taken looking up
the gorge at 4000 ft. to
show this growth &
also the Red & yellow pine
a few, Op. polyantha
scattered

At 4300 ft. Boxelder & gray
leafed ~~shrub~~ ^{shrub} (shrub fruit
strong like Currants)
At 4300 ft some
Wild Locust
At 4500 ft Wild Rose
& at 6000 " " abundant
thence to 8000.

At 6000 ft the prickly
leaf oak drops out & Gambel's
comes in abundantly & abundantly
Wild rose, a Thalictrum; Gray
leaf bush, Mt Ash; Mangrove
Cedar, pinon, ^{maple}, Rhus trilob. all
common & first yellow pines
here; also Red Cedar - many wild locust
Vegetation becomes denser
though from 4600 - 6000 the
growth is more abundant than
below that alt.

At 6200 Ridge Gashed
the beam first came in
with some plant growth
at 6000

At 7000 ft. saw Bright Angel
Sp. in a hole of rock
500 yds. away from camp
his tail hanging straight
down at right angles to
the body. Bright Angel

In willow patch at 4000 ft
some drawers were located
Birdseye caught 2 in a
couple of traps he left on the
way down the 12th.

Citellus grammurus feeding on
red Cactus fruit.

At top of trail secured another
Kaibab squirrel - the tail shows

up with great brilliancy in sun
light making the animal extremely
conspicuous

Sept 15 In camp Bright
Angel Sp.

Stayed over here today to clean
up the accumulated specimens.
The night of 12-13th to frost ice
1/4 in thick in this camp & sharp
frosts occur nightly now.

Tracks of 1 wild Cat & 1 skunk seen
at mth. of Bright Angel Cr. & 2 Civet
Cats caught morning of 14th

Sept 16 Bright
Angel Sp. to Camp in
Canyon below (NW. 2)
Dry Park 28 m. 8000 ft.

8700 on S. Slope
At 8400 ft. above
Bright Angel Sp. Saw the
first Scaly bark firs
since the Camp in Big Park
+ 8500 on N. Slope

No heavy ridge bark fir nor
balsam firs were seen among
the dense growth of Scaly bark
fir on N. Slope along bottom
of gulches. ~~Fir~~ from 8400
ft up to top B.A. Sp. &
Big Park ^{none of} scarcely any Aspens
but some Juniperus communis.
On South slopes from 8400 ft up

~~was~~ to 8800 ft were all the
firs + 2 pines. The big ridge
fir apparently drops out on N. slopes
at about 8400 ft.

~~Saw~~ 2 or 3 Swainson's hawks
at upper end Big Park, 1 eating
Cathartes mexicanus
Upper end of Dry Park 8400 ft

Sept 17 From Camp below
Dry Park to Camp north of Pyramid (1/2 m).
Distance 22 altitude 6000
On the mesas bordering Dry Park
as well as along Canyon leading
below to west to 3 forks (alt 7500).
Yellow ~~jack~~ Pines are common
+ the woods have the open grassy
character common to yellow
pine forest with these pines
are Jack Pines + the 2 ridge barked
fir + many aspens

At 7900 - 8000 ft Wild Rose &
Quercus gambelii abundant
on south slope ^{Especially wild rose} a few
pinyons & cedars common
in. At 7900 ~~the~~ oak
was abundant in patches
3700 - 7300 ft

The pine about 3700 ft
cedars both ridge backed
Species together though scattered
if occurs farther down
Aspens also become scattered &
mainly on north slopes
Below the oak the yellow
Pines & Gambel's Oak are
predominant with a
few Cedars & Pinyons
Kaibab Sy. begins at 7400
At 7300 Artem. trich. comes
in common in south

side slopes. Abundance
of Robinia at 7300 ft in
bottom of Canyon
The Artemisia extends
about 200 ft above this
on S. slopes & is accompanied
by abundant Cedar Pinyons
& by the thinning out of yellow
pines.

On north slopes at 7300
a few other ^{new} ridge backed pines
still occur at 7500 ft
but are getting scarce mainly on
N. slopes

Big Spring 6400 ft. by G.S. map
just above Big Sp. Rhus tri-
lobata came in common in
patches. The Box Elder came
in first at Big Sp. The
General slopes have the

Clematis

largest proportion
of Cedars & pinyon
from about 7000 ft
down it is mixed
with Yellow & Jack Pines
& *Quercus gambelii*
but should be considered
mainly upper Sonoran

On steep N. slopes at
~~6000 ft~~ side canyons
transition comes down to
6000 ft. to a dense growth
of *Quercus gambelii* &
an abundance of scattered
rough bark fir though the
oaks come most often to the
near Ryan, especially on
foothills just north of there
the small-leaved *Cercocarpus*,
a small leaf *Betula*, *Athyrium*

tridentata & *trifida*(?) were common
with scattered gambel's oaks,
Juniperus monophylla &
Pinus edulis & *Yucca baccata*
Red-fruited *Opuntia* (small samples
with fruit) & the thorny *Opuntia*
Common from this area to near Kanab

Sept 18 From Camp 1 1/2 m.
N. of Ryan to Kanab Utah
30 miles.

Pitton jays	<i>Corvus sinuatus</i>
<i>Sialia bairdi</i>	
Thorn's	
Gray Titmouse	
Sp. of <i>S. arizonae</i>	
" brown	
Powder	

at Kanab
Tyrannus verticalis

~~Sept 18 From Camp 1 1/2 m. N
of Big Horn~~

Sept 19 at Kanab

Also Sept. 20 & 21 Spent
at Kanab on reports &
letters. Birdseye did some
successful trapping on
a sandy place 2 miles
south of town.

Sept. 22 Left Kanab
after 2 P.M. and made
20 miles in a S.W. course
to Pipe Spring, passing
through Fredonia on the
way. Alt. of Pipe Sp. = 5000 ft.
From Kanab to Fredonia
there is a fall of about 200 or
300 ft. The *Ant. tibialata*

which is most abundant
with *Atriplex canescens*. Bot.
Kanab & Fredonia gives way
near Fredonia & mostly
over the plains nearly to
Pipe Sp. *Atriplex confertifolia*
is almost the only plant on large
areas & near Pipe Sp. gives way
in places to *A. canescens*.

Sept. 23 Left Pipe Sp. about
8 a.m. & traveled in a southerly
course 10 m. past Cedar Knoll &
then on 10 m. beyond to where a
road branches to the west where
we had luncheon. Pipe Sp. is
at the point of a ~~spur~~ of the
Vermilion Cliffs. Two old 2 story
stone houses close together with
well made loopholes for guns

is a relic which are the dwellings
of the ranchmen living here
are relics of the days when this
section was just occupied &
this "stone" fort was necessary
for safety. The slope from
the ranch down to the plain
~~was~~ is covered with a few
scattered cedars & much *Atriplex*
canescens & this bush with
A. confertifolia were the only
bushes noted for 20 m. across
this gently sloping desert plain.
Much grama grass, Considerable
yellow *Clione* and the yel. f. Comp.
something like *Gutierrezia*

White Sage & a few *Ephedra*
& com. on Lycium about 5000 ft.
made up the great bulk of the
vegetation. Malvastrum with
the pretty salmon colored flowers

The inflated stemmed leafless plant
seen at ~~Luttrell~~ was common for some
distance today but, Cedar Knoll & our camp

was rather common. Wherever
the ridges reach 5000 ft on this
plain its borders Cedars & *Pinus*
concolor. We are headed for
Mt Trumbull.

Night overtook us about 10 miles
from where we left the original road
or 30 m. from Pipe Sp. we made
a dry camp

Sept 24 Left camp about 7 a.m.
& continued a S.W. course about 4
miles until we entered the Black Canyon
or St George Road leading south
to the old sawmills at Mts Trumbull
& Logan & then followed it for about
7 or 8 miles to a broad open flat at
South base of Trumbull where we
found 2 trails & a wagon by a
on the East side of flat where we watered
the horses. Soon after starting this morning

Artemisia tridentata came
in abundantly with a much
larger amount of *Ephedra viridis*
also Cedar & Pinyons with some
small leaved *Cercocarpus*

The very rocky road led us
around the ^{west} point of Mt. Tumbull
to Tumbull Spring on the S. side
just north of Mt. Logan. We camped
at the site of an old sawmill at about
6400 ft. at the extreme lower edge
of the yellow pine belt from ^{N. slope of} Mt. Logan.
The Pinyon & Cedar belt on S. side of
Tumbull extends up to about
6800 ft. or a little higher.

Common Sp. Pigeons, 1 meadow lark,
Falco mexicanus, *S. s. phalaena*, (Yesterday
saw 1 Golden Eagle near Yellowstone Sp.)
Ch. mod. frontalis, Pinyon & Woodhouse jays
Red-tl. Hawk, *Otocoris*, 1 Co. Dove
Seen near Camp & last night.

1 Jack R. seen near last night's camp.
also 1 W. tl. Chipmunk.

We reached Tumbull Sp. after traveling
about 16 miles from last night's camp
making a total of about 66 miles from
Kanab. Several sage brush flats
occur immediately about the W.
& S. base of Mt. Tumbull & the foothills
are covered with pinyon & cedar.

Sept 25 Tumbull Sp.
In morning took horse, & rode
up side of Mt. Tumbull to
half of old summit on
the branch about 150-200 ft
below top. In transition zone
were many yellow pines & few Black
pines (no spruce or firs) much
 Gambel Quail, many locusts, sparrow
Roses, gooseberry, & ~~some of the common berries.~~
seen.

Saw many Band-tl Pigeons, Woodhouse
~~the~~ Crested Jays, Pigeon with h.
Bds. Bluebird, Flicker, Myadestes ^{water} ~~blue~~
In the Upper Sonoran zone the
Characteristic plants of the Cedar
belt on S. slope of Mt. Trumbull
are Cedar (*monophylla*), piñon, small prickly
leaf oak, canon shrub, *Berberis*,
Mangarita, *Aster tridentata*.
+ the Service Berry (apple leaf shrub)

Sept. 26 Trumbull Sp.
Rainy weather. Rained most
of last night & showers all day today.
Could not accomplish much.

Sept. 27 Trumbull Sp.
More showers in morning.
I remained in camp working on
reports. B. went out to set
traps for Eutamias, a grayish
species of which he caught one yesterday.
Our camp man Oscar Pratt
tells me that in the Kanab Country
the Prairie Dogs are extremely abundant
on the headwaters of Sevier, Riv
above Paria gulch up to the
top of the divide between the head
of the Sevier & the head of Kanab Cr.
A few occur on divide a little
common on S. slope but none reach

the headwaters of the Kanab.
Sage hens are abundant as far
south along Sevier Riv. as the
mouth of Mammoth Cr. They
are very numerous from north
of Mammoth Cr north along Sevier,
for some dist. toward Panguitch.

Sept 28 In morning I
rode south from Camp to
top of Mt. Logan (7700 ft)
The north slope of summit for
last 500 ft. has a scattered
growth of yellow & a few Jack Pines
with dwarf locust, Gambel
Oak & some *Cer. tridentata*.
Near top of north slope *Rhus*
trilobata which became
common & extended on top of
rounded summit when

there was a mixture of this *Rhus*
with *Cer. tridentata*, the
common manzanita, the Service
berry, dwarf locust, the Gray
leaf shrub like that on rim
of Bright Angel Canyon and
another low shrub of which
a spec was taken.

From the top of Mt. Logan a good
view of Mt. Emma was obtained
& the supply of yellow pine is
confined mainly to top of N. slopes
down 700-900 ft. The upper
Sonoran goes up on S. slopes
nearly or quite to summit as
it does on Mt. Logan but
the ~~the~~ mesa like tops & ridges are
free covered with yellow
pine, Gambel Oak & some
dwarf locust.

From top of Mt Logan
Returned to Camp and
after dinner moved 5 miles
northward to a ~~water~~ pond of rain
water in a small basin-like
valley on the NW. side of Mt. Trumbull
where the forest Supervisor ^{Swell} & 4 men
are camped surveying the
limits of this forest Reserve (alt 6200).
Camped at this same place is
a party out from the east collecting
frogs (Mr. ^{J. H.} Foss), Snail Shells (Mr.
L. E. Daniels) and their ² companions
~~and the Supervisor~~

Sept 29 In camp 5 m.
north of Trumbull Sp.
Worked on reports & made up
some birds. Birdseye made
up specs & trapped. The
forest supervisor Swell left

for St George in the morning.
When he came up to ~~the~~ our
camp at Trumbull Sp. a
few days ago he offered us some
fresh beef & also said he was
hauling spring water to his camp
where we now are & that his
outfit would start us off with
a supply of spring water for
our trip to St George. When
we reached him however
we got neither one nor the other.
His word is better than his performance.
We are clearing up to start in
tomorrow. Raven & least Titmouse
noted here today & a Screech
Owl camped our camp
late last night.

Sept. 30 Left camp at
N. base of Mt. Turnbull early &
made 4 miles to Clay Hole water
nearly due north, noon & 20
miles further to Antelope Sp.
by 5 PM. Clay Hole alt about
5000 ft. *Atriplex canescens* &
confertifolia, *Ephedra*, *Gutierrezia*
& gutierrezia like plant the
main vegetation, including
also the same little shrub *Gutierrezia*
but it is less common along
this route than on the route to

alt 2600 ft

Oct. 1. From Antelope Sp.
to St. George. 25 miles.
The vegetation at Antelope
Spring was mainly *Chrysothamnus*
gracilens, *Salicornia*, prickly
salt grass, *Baccharis* sp. *Atriplex*
sphaerocarpa, *Gutierrezia*, *argentea* etc.
A small angular, thorny branched
bush with small fleshy leaves
which we saw near ~~Cedar~~ at
about 5000 ft alt south of
Cedar Knoll (among Cedars)
on way to Mt. Turnbull which
is one of most numerous plants
in all directions about Antelope
Sp. The yellow fl. *Chamaecrista* like plant
the abundant *Opuntia* like one
near Kanab & occasionally
O. polycantha, *Lycium*, &
A few *Sarcocolla* berries &

Small leaved Mt. Mahogany
& considerable White Sage
On top of just back
of Cr. Hs. Hurricane ledge
a small bush closely like the
the brown flowers shrub
Common at Tuba came in
abundantly on tops of rounded
hills. It was only 12 to 15 in high
& grows more compactly than
the Tuba. The short angular
branched Ephedra like one
seen in Chin. low valley also
came in here

Considerable Covillea came
in ~~abundantly~~ less than halfway
from top down Hurricane ledge on
S. slopes. ~~It~~ At same time
the short spine grass like at Mt. S.
Bright Angel Cr. & the leafy white
thick small Opuntia (pear leaved)

Pictures taken from halfway
down on Hurricane ledge
to ^{west of} South over valley & Cedar &
Pinyon Corners Mts & another
to NW toward Pine Valley
mts across brilliantly red
fronted mesa

^{3 ft}
Covillea covers all the
plain up about 200 ft or so
on W. front of base of Hurricane
ledge

From W. base of Hurricane ledge
by old H. Pierce the Covillea, Atriplex
(canescens & confertifolia both but not very
abundant) the willow-like slender pod
bush & mesquites along Pierce Wash,
The slender branched Guthriea-like shrub
or herb (common at Antelope Sp), the thorny

glossy leaved shrub, a broad leaved
Yucca (at base of Ledge shown in photo)
the long slender leaved Yucca out
in bottom, the abundant Opuntia
photographed (sometimes with white spines
& sometimes reddish brown spines,
The white spined pear leaved Opuntia
similar to polycantha but more
densely spined, & a cylindrical Cactus
like one seen from Hones Rock
Valley,

When we came down into
~~the~~ the Virgin Valley & while
crossing it we saw several
Orocoptes, White Cr. Sparrows
1 flock Gambel's Quail, Brown
Sparrow & Brown. Black bird &
Raven. Numerous White-tailed
Chipmunks all the way from
Antelope Spring.

Oct. 2 Remained
at St. George attending
to correspondence, reports, getting
information about the country
& trying to arrange to go out
for a trip tomorrow.

Oct. 3 Remained
in St George working
on reports &c

Oct. 4 Left St George
at 7.45 am for a trip up
Virgin Valley to run out
zone lines. To Virgin City 38 m.
At about 3000 ft alt, about Leeds
there is a mixture of cedars, Rhus &
along the hillsides with
Covillea, Mesquite, Chrysothamnus
grovellus. The cedars &c are
mainly on northerly exposures

* Canada or southern ones -

At Leeds they grow
Thompson Seedless

Mission Grapes

Malaga "

Isabella

Apricot { Mammoth Heath

Peaches { Alberta

Pome (French)

Plums

Black fig

Flaming Tokay

Almond (English) plant

Peanuts { Hurricane City + Santa Co.

Alfalfa 4 + Cattails

Wheat { Club varieties

White

Oats do well

Newberry + Ailanthus

Cotton business ended
about 1874 (began about ~~18~~
1866) owing to its not
paying. It was grown
all up to Virgin City
Leeds or down on
the muddy. It was
grown on the muddy up
to about ~~18~~ 1902. It
was made into cotton
bathing only.

At about 3400 ft on slope
north of Leeds there is a
belt of shrubs made up
of the small leaved Oaks,
Berberis (red fruited), Chus, trilobata
Cedars + a short slender
leaved yucca (leaves 12-15 in
+ a short trunk + a scalloped
leaved Chus

At Toqueroville the
valley narrows & scattered
cedars occur all along
west side of valley to creek
of town. Both sides of valley
are lava

Oct 5 Virgin City to
St George. Dist. 36 m.
Near Virgin City we had
the small yellow flowered frost
leaved plant same as at
Lee Ferry, also Yelow. Ephedra
like plant, Old man ~~shrub~~ shrub
covering wide areas, slender
leaved Yucca, also
great abundance of the
straggling stemmed Eutrochium
like composite which came
in near Antelope sp.
Lycium near Virgin City
on N. side of river
yel. fl. Chione.

At about 3500 ft (S. of Virgin City)
Berberis, Rhus trilobata, a few small cedars
came in & cut out lower down on peaks
& mark the lower border of upper

Sonora on the rocky exposures
on S. side of Virgin Valley near
V. City. The Coriellia were
abundant on top of S. slope of
Huerfano Cliffs along road
up to Saguinilla to Virgin

Prickly pears abundant just
above the ^{about 2 miles} ~~about 2 miles~~ mark
the southern limit in this section

A mossy ~~area~~ ^{area} at
Virgin City. Also Baccharis
on return via Huerfano
We found Coriellia up to top
of Huerfano Cliffs.
The semi fl. shrub was abundant
from top of Huerfano hills
at least down to 3000 in
Valley near Huerfano

The Driest Tortoise, *Gila*
Monasterio & *Chusquilla*
are in Virgin Valley to Saguinilla

Mixed with Coriellia in
canyon down Huerfano Cliffs
were numerous small leaved *Cercocarpus*

Oct. 6 St George
Remained here
all day writing & packing
preparatory to leaving
tomorrow.

Oct. 7 Left St George at 6.50
a.m. on way to Mt Meador (Humbler)
~~Coriellia~~ distance about 40 m. alt
5750 ft. ~~side~~

Coriellia & other L. Sonoran plants
up to about 3500 ft & then
most of them drop out & *Atriplex*
canescens becomes more
common on the straggly *Eutropea*
like plant, *Phedra* white stem

continue

Gutierrezia-like plant ~~which~~
~~man bush come in~~
with arborescent cacti. The
old man bush comes in
about 3700 ft.

The small fleshy leaved
thorny bush out at 3600
At 3800 ft the long heavy
leaved yucca & the
brown flowered shrub came
in with a few light scattered
Covilleas, Old man shrub
& straggly stemmed & white
stemmed Gutierrezia like plant
the small fleshy leaved thorny shrub
At 4000 ft. *Artemisia*, *Arborescent*
Cercocarpus

At 4000 ft *Artemisia* *Intertexta*
Cedar, small leaf *Cercocarpus*
& *Berberis* (red berry) came in
and at about 4300 ft the small
leaf oak & large *Rhus trilobata*
Ash, box Elder ^{came} in at
place where we had lunch.
Chirpoo up to 4500 or more

At the S. end of Mountain
meadows is a rough conical
pile of rocks about 5 ft high
where Mt Meadow Mss.
is said to have occurred
& John D. Lee executed
I photographed it. In the
draw leading up to Mt.
meadows at about 8400 ft
patches of *Quercus gambelii*
came in & a few prickly

leaved oaks seen.
Mt. Meadow Valley, through
out its length is overgrown
with sagebrush except the
~~flat~~ land cultivated on the
ranch at each end. There
is a divide in middle of
valley at about 5900 ft alt
& the valley then descends to
N. & S. On the mts border-
ing the valley, rising to 7000
ft at highest points the
Cedar & pine belt goes
slopes facing the north go
up to about 6500 ft above
which the mt. tops are
bare of timber, with some
small bushes which are
turning yellow & brown by frost.
On the slopes facing the

South the cedars & pines
are very much scarcer
than on N. slope - replaced
by *Artemisia tridentata*
which goes up apparently
to 6700 or 6800 ft & then
is replaced by the transition
belt.

Saw a covey of 5 Sage hens
just before reaching Hamblin.
Quail said to be abundant
at this ranch (*L. gambeli*)
Woodhouse Jay, Wh. Cr. Sparrow,
Chip. Spar. Canyon Wren
Sage Flyc (St George)

Wh. - tl Chipm. up to noon.
at 23 m. from St George.
One *Citellus grammurus* at
lunch place.

Oct. 8 Hamblin
ranch to Modena
H. m. alt. 5457 ft.

~~After~~ From Hamblin ranch
the road leads north
through a winding canyon
for about 4 miles then out on
the nearly level sage brush
plain called the Escalante
Desert. The desert has a
SW by NE course & the
S.W. end is 22 miles broad
when we crossed it to
Modena on the Salt Lake R.R.
Modena is at the S.E. base
of Mt. Glenora at about 5200.
As we crossed the desert we could
see the Beaver Mts to the north
with a heavy white cap of snow

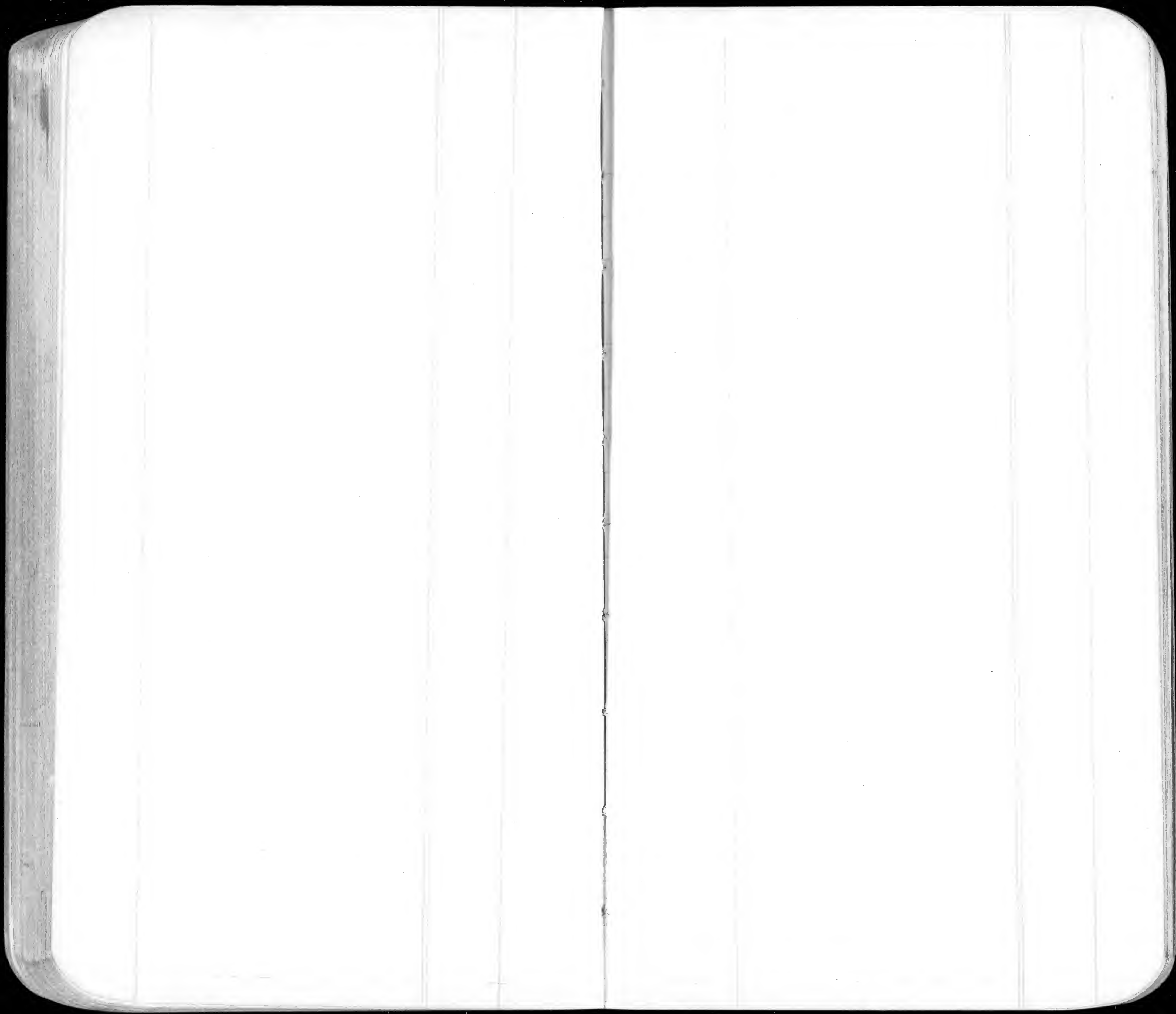
covering entire top of range.
Several Jack Rabbits seen
white crossing desert &
one shot close to Modena.
We also found an abundance
of small, short tailed Spermophilus
living among the sage
brush & especially in the
more open grassy places
on the desert the last 4 or 5
miles going into Modena.
At Hamblin ranch they report
sage hens not uncommon
& one flock of 30 was counted.
Many *Lophortyx gambeli* are
now gathered about the grain
fields. The small Spermophilus
was reported to be extremely
abundant farther east on
this desert & said to be very

disturbance & yield of
yucca alba which they
very often gather about in
such numbers that they some-
times almost destroy the field.
No Prairie Dogs known from
anywhere at the southern end
of Escalante Desert

Lower limit of Cedar belt
on mts just back of Modena
is about 5500 ft ~~very~~ extend
over top of these mts which
reach extreme limit of 7500 ft
here on the Senora

The most extensive range of mts
along the west border of Escalante
desert from near Modena north
are below 7500 ft. & are mostly
covered with Cedar & juniper but
some are bare. This is the southern end

Modena Oct 9 /09
English Sparrows
Common
Rocky
Cedar & juniper & Sage brush



L. E. Daniels

1104 Main St LaPorte
(shells) Ind

J H Ferriss (Editor Joliet
News)

Joliet Ill

Shells & Fossils

Both with zone maps &

Daniels is anxious to
get set up. Biol. Surv. pub.

Total miles to Sept 8 = 660.

Sept. 8 - 11 Remained at Bright Angel Sp. alt

" 12 Bright Angel Sp. - Mt. Bright Angel Cr. 16 2300

" 13 In camp " " " "

" 14 Mt. Br. Angel Cr. - Br. Angel Sp. 16 8000

" 16 Br. Angel Sp. - Camp Below Dry Park 28 8000

" 17 Camp Below Dry Park $1\frac{1}{2}$ m. below Ryan 22 6000

" 18 Camp below Ryan - Kanab 30 5000

" 22 Kanab - Pipe Spr. 20 5000

" 23 Pipe Spr. - Camp n. of Mt. Trumbull 30 5500

" 24 Camp n. of Mt. T. - Trumbull Spr. 16 6400

" 28 Trumbull Sp. - Flat at N. Point Mt. T. 5 6200

" 30 Flat at N. point Mt. T. - Antelope Sp. 45

Oct. 1 Antelope Sp. - St. George 25 2600

" 4 St. George - Virgin City 38 3200

" 5 Virgin City - St. George (new road) 36 2600

" 7 St. George -

Cactus photo

near Antelope Sp. Absconvent
Sp. like from House R. Sal. - Kanab
Antelope Sp.

How
 Will you be here
 the next 2 or 3 days?
 I will be around
 tomorrow to get some
 information about
 various matters
 Is

Drawn
 989 1132-453 (tail pad)
 L. 288 (with spec) - 185

Small 1000-390 (tail pad) 1230-155
 height 176

At Hards 125
 " 125 Fall
 15 Virgin City 60
 Hurricane 125

204 + 202
 ✓
 ✓

40
 Leads dinner 35¢
 Hurricane " 40 } 75

W L 44473
 320

#6 L 4464 Seen Rock
 2000-2050
 1000-1050 6L 4465
 2000-2050 6L 4461-344

2000-2050
 330

Y. H. H. H.
D. H. H. H.
H. H. H. H.
H. H. H. H.